



Finding the way into the darkness. A unique endourologic realignment to treat a complete disruption of the posterior urethra to a 7 years old boy. A case report

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ABSTRACT

Urethral injuries occurring during pelvic trauma can cause a heavy morbidity and negative impact for the quality of life of a child.

We present a case of a 7 years old boy with a complete posterior urethral disruption managed with a successful realignment by a unique modification of the “rendez vous” technique with the simultaneous performance of both antegrade flexible and a retrograde rigid cystoscopy.

Introduction

Posterior Urethral injuries usually correlate with pelvic fractures (72%).¹ In children, urethral injury in pelvic traumas range from 7.4 to 13.5%.² Recurrent urethral strictures, urinary incontinence and erectile dysfunction are the main complications that can be devastating for the quality of life.³

We present a case of a 7 years old boy with a complete posterior urethral disruption managed with a successful realignment by a unique modification of the “rendez vous” technique with the simultaneous antegrade flexible and a retrograde rigid cystoscopy.

Case report

A 7 years old boy was transferred to the emergency room after been injured by a bus. The patient was hemodynamically unstable and was urgently intubated. The clinical examination revealed a large laceration on his right thigh with multiple pelvic fractures. In the digital rectal examination, the prostate was not palpable and posterior urethral transection was suspected.

CT scan revealed a right pneumothorax with lung contusion, multiple liver lacerations. Multiple pelvic fractures were noted including the inferior and superior rami, bilaterally with extension to the acetabulum in the right hip. Also, a prominent right pelvic wall hematoma, compressing the urinary bladder was apparent.

The patient was submitted to an emergency laparotomy, which

revealed an injury of the portal vein that was sutured. Suprapubic catheter was inserted through the intraperitoneal space because of a large hematoma in the pelvis. An external fixation of the pelvic fractures was placed in 2nd POD.

Eleven days after the injury, elevation of serum creatinine up to 172 micromol/l with decreased urine output raised the suspicion of urinary leak. Abdominal Ultra Sound followed by CT scan revealed a moderate amount of abdominal fluid. Under US a peritoneal drain was inserted with drainage of 1000 ml clear fluid. Creatinine level of this fluid was 556 micromol/l. An antegrade cystography demonstrated leakage from the bladder neck (Fig. 1).

The patient was transported again to the operating room.

Under fluoroscopy a guide wire was inserted to the bladder through the suprapubic catheter and the tract was dilated up to caliber of 18F.

An antegrade cystoscopy using a flexible cystoscope revealed a long tear in the bladder neck. Various attempts to pass the wire into the urethra failed. A retrograde urethroscopy using a rigid 7F pediatric cystoscope was performed and a complete disruption of the posterior urethra from the bladder neck with a big gap between them was observed. The light source of the flexible cystoscope was then turned off and the observance of the light of the semi rigid pediatric cystoscope was made possible. The flexible cystoscope was carefully advanced towards the pediatric cystoscope. When the flexible scope was in the vicinity of the rigid cystoscope the light of the flexible was turned on and the light of the rigid was turned off and this maneuver made possible the visualization of the working channel of the rigid scope. A guide wire was

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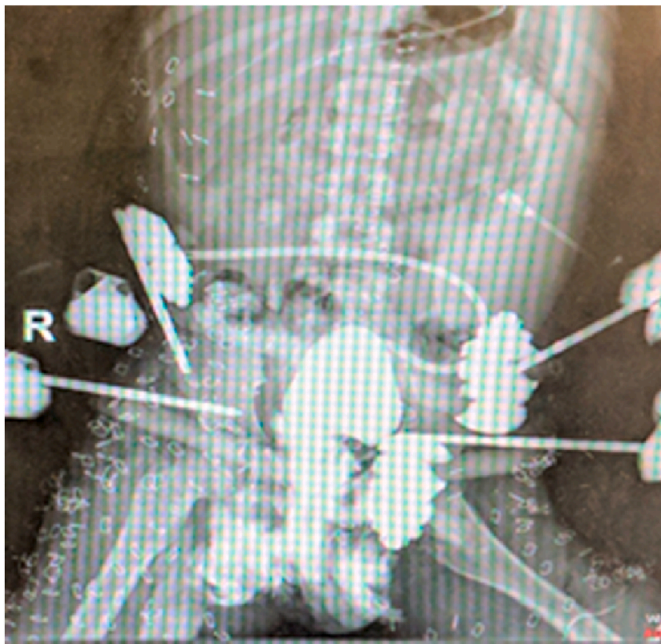


Fig. 1. Contrast material leakage from the bladder neck.

advanced into the working channel of the rigid, emerging out from the urethra passing through and through from one working channel to the other securing the correct route regardless the big dark gap avoiding a serious false route (Fig. 2). Realignment was then accomplished by advancing 12F folley catheter through the urethra into the bladder under the direct vision of the flexible cystoscope. A supra pubic open-ended catheter (18F) also was inserted. Both an Antegrade and a retrograde cystography at the end of the procedure revealed no urinary leakage from the bladder neck (Fig. 3).

One day later, the intraperitoneal leakage stopped and serum creatinine level was normalized. We removed the intraperitoneal drain on 2nd POD. After one week the suprapubic catheter was closed and the

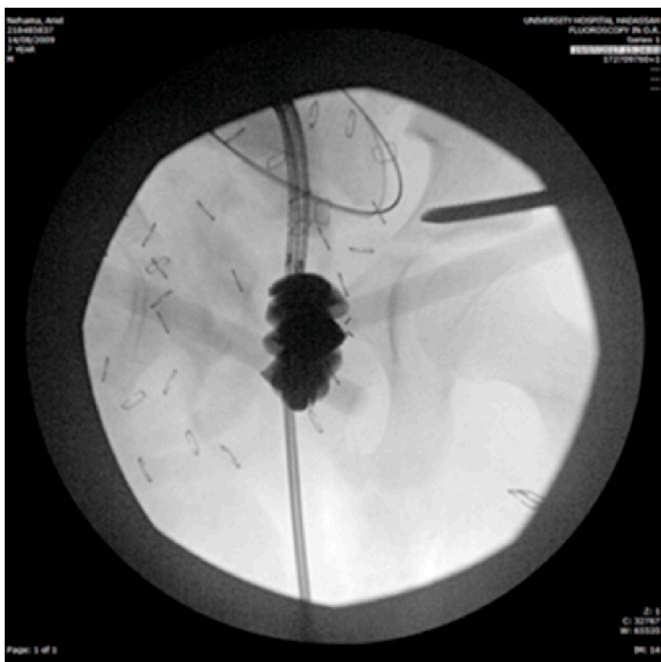


Fig. 2. The realignment of the urethra using the semi rigid cystoscope working channel as an access sheath.



Fig. 3. No extravasation after the realignment.

urine was drained only by the urethral catheter and the patient was discharged and planned for a reevaluation urethrogram 3 months later.

Discussion

In the emergency patient with a complete posterior urethral disruption the first step is the placement of a suprapubic diversion till the final management to be made.^{2,4} In our case the severity of the injury allowed only the placement of a suprapubic catheter after damage control. It is still a debate concerning the initial treatment of the posterior urethral injuries and the role of the primary endoscopic realignment in the pediatric population since not enough studies exist in the literature.² It Seems to be a consensus, especially in pediatrics, about the endoscopic realignment of the complete posterior urethral disruptions performed within fourteen days before fibrosis begin.^{2,5} The gap that occurs in such injury is gradually replaced by fibrotic tissue. In our case after the suprapubic catheter placement we performed an endourologic realignment after 11 days. During the endoscopic realignment the technique usually performed is the placement of a guidewire in the bladder and a catheter is placed over this either with the use of one cystoscope retrogradely or with the simultaneous use both of a retrogradely and a antegradely flexible cystoscope.⁵ The guidance is performed with the use of fluoroscopy and the correct direction of the guidewire can be both difficult and misleading. We chose a different approach from just an advancement of a guidewire with the guidance of fluoroscopy and by manipulating consecutively the light sources of the two scopes, we achieved a real meeting of the scopes “rendez vous”. By turning off the light of the Flexible scope we managed to obtain a visual contact with the rigid scope and we advanced the flexible gradually. Then, after turning off the light source of the rigid, the light of the flexible was turned on and the working channel of the rigid scope was apparent. The advancement of the guidewire to the working channel of the rigid was easy and most importantly secured an ideal alignment with a catheter advanced over a properly placed guidewire in the bladder though the original route of the urethra. The big gap between the two disrupted parts is a black space with no visibility that permits easy and secure realignment. A real meeting of the two scopes to the Rendez vous is of most importance.

Declaration of competing interest

None.

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